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(54) Waveform generator for insertion of data into digital television signals

(57) A digital waveform generator complies with different vertical blanking interval (VBI) standards, and is inserted into VBI portions of a digital component video signal. A buffer receives symbols carrying VBI data for a particular VBI service according to a user data syntax, which identifies a television line into which the VBI data is to be inserted. A symbol processor is responsive to information provided by the syntax. This information indicates the number of pixels represented per symbol, a symbol transition time, and the number of symbols

carrying data to be inserted into the VBI portion. The symbol processor provides the VBI data in a format according to the particular VBI service. A timing circuit is responsive to a start time provided by the syntax for inserting the VBI data. A level control circuit adjusts the level of the VBI data prior to insertion into the VBI portion in response amplitude values provided by the syntax.

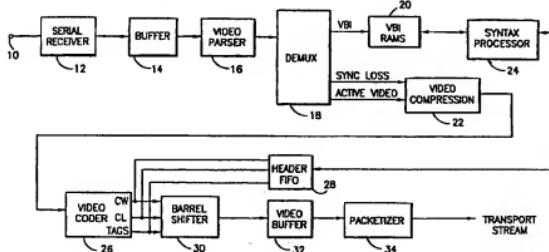


FIG.1



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EUROPEAN SEARCH REPORT

Application Number
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DOCUMENTS CONSIDERED TO BE RELEVANT		
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim
P, A	WO 97 01930 A (GENERAL INSTRUMENT CORPORATION OF DELAWARE) 16 January 1997 (1997-01-16) * page 4, line 4 - page 5, line 23 * * page 15, line 1 - line 28 * * figures 1,3,4 * & CA 2 179 322 A (GENERAL INSTRUMENT CORPORATION OF DELAWARE) * the whole document * ----	1,12
A	WO 95 15660 A (SCIENTIFIC-ATLANTA) 8 June 1995 (1995-06-08) * page 27, line 17 - page 30, line 19 * ----	1,12
A	EP 0 740 474 A (OKI ELECTRIC INDUSTRY) 30 October 1996 (1996-10-30) * abstract * * column 7, line 24 - column 8, line 7 * ----	1,12
E	WO 98 05167 A (TIERNAN COMMUNICATIONS) 5 February 1998 (1998-02-05) * the whole document * -----	1-21
The present search report has been drawn up for all claims		
Place of search		Date of completion of the search
THE HAGUE		27 October 1999
		Examiner
		Berwitz, P
CATEGORY OF CITED DOCUMENTS		
X : particularly relevant if taken alone	T : theory or principle underlying the invention	
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**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 98 10 0544

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

27-10-1999

Patent document cited in search report		Publication date		Patent family member(s)		Publication date
WO 9701930	A	16-01-1997		US 5699124 A		16-12-1997
				AU 6339896 A		30-01-1997
				CA 2179322 A		29-12-1996
				CN 1200220 A		25-11-1998
				EP 0880854 A		02-12-1998
				JP 9102941 A		15-04-1997
WO 9515660	A	08-06-1995		US 5493339 A		20-02-1996
				AU 679824 B		10-07-1997
				AU 1333695 A		19-06-1995
				BR 9408234 A		26-08-1997
				CA 2177563 A		08-06-1995
				CN 1142878 A		12-02-1997
				CZ 9601547 A		12-03-1997
				DE 732033 T		11-09-1997
				EP 0732033 A		18-09-1996
				HU 75274 A		28-05-1997
				JP 9506223 T		17-06-1997
				PL 315201 A		14-10-1996
EP 740474	A	30-10-1996		JP 8298649 A		12-11-1996
				US 5796441 A		18-08-1998
WO 9805167	A	05-02-1998		AU 3899697 A		20-02-1998
				EP 0916226 A		19-05-1999